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Explicating the information vacuum: stages, intensifications, and implications

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Abstract

Purpose – Information vacuums (IVs) arise from organizational failure to satisfy the stakeholders' informational demands during crises. The purpose of this paper is to expand Pang's (2013) study of the phenomenon of IV by investigating its nature, stages, intensifying factors and resolution.

Design/methodology/approach – Print and social media data of five recent international crises with apparent IVs were analyzed.

Findings – Poor crisis communications are intensifying factors that induce media hijacks and hypes, distancing, and public confusion. A four-stage model maps the phenomenon into a flow chart describing its development. IV termination begins when organizations either respond with information or provide solutions, results, and/or compensation. Natural and strategic silence were observed and defined.

Research limitations/implications – The study lays the foundation for future examination of how media literacy, governments, and culture, both societal and organizational, induce or exacerbate the phenomenon.

Practical implications – Immediate, adequate, transparent, credible, and consistent crisis responses manage the IV and crisis, diminish the intensification of subsequent crises, and potentially reduce image and reputational damages.

Originality/value – The knowledge of the phenomenon is further developed and new theoretical models are conceptualized to provide researchers and practitioners a clearer understanding of how an IV can develop, persist, deepen, and resolve.

Keywords Crisis, Silence, Life cycle, Information vacuum, Strategic transparency

Paper type Research paper

Introduction

The occurrence of a crisis is a ubiquitous anomaly, whereby the publics' search for more information spurs the media's demand for answers, birthing the information vacuum (IV) (Coombs, 2012). Organizations can either pre-empt the IV by "stealing the thunder" (Arpan and Roskos-Ewoldsen, 2005, p. 426) or escalate it by avoiding the media. As the IV is made increasingly public through widespread social media exposure, a deluge of misleading information can be detrimental to the affected organization (Coombs, 2015a; Pang, 2013b). Presently, even though there are studies that have established the IV's presence, nature, effects, and characteristics (for instance, see Pang, 2013b), few have examined the stages of the IV as well as the prevalence, traction, and growth of the social media hype. In this study, both social media and media hypes are examined as factors influencing the IV.

This study examines five international crises to elucidate the IV's mechanics, probable stages, intensifying factors, and organizational actions that lead to its resolution. This study is significant because it provides new theoretical perspectives that attempt to further explicate the IV's nature and the events that occur within it, and establishes new grounds for future research and exploration. It aids practitioners and organizations in understanding how poor initial actions could potentially escalate both the IV and the crisis. This study would also interest practitioners as it provides them with an understanding of what can be done to resolve the crisis, as well as to reduce the media and social media glare on the

organization. Lastly, the study's findings allow organizations to monitor their progress through the IV during a crisis and aid them in post-crisis learning for better management and communication.

Literature review

Clarifying the nature of the IV: strategic crisis management perspective of the IV

From a strategic crisis management viewpoint, the responsibility to fill the information or communication void (Coombs, 2012; Timberg and Dehghanpisheh, 2012) rests with communication practitioners and their top management. According to Clark (2000), the top management believes that only it has the ability to make strategic decisions for the organization, as this symbolizes its power, control and presence in decision making (James and Wooten, 2010). Such monopolization of the crisis management planning process shows the top management's disregard for full organizational involvement in successful strategic crisis management (Dandira, 2012). This either signifies or leads to poor internal crisis communication, an absence of crisis preparedness culture (Frandsen and Johansen, 2011), and establishes barriers in accessing the top management (Bowen, 2009). One of the key theories used in analyzing crises (An and Cheng, 2010), the contingency theory of strategic conflict management, which offers a list of factors that influence crisis stance (Pang *et al.*, 2010), identifies the management's conservative and authoritarian characteristics as long-term internal organizational threats (Pang *et al.*, 2010). This could conceivably contribute to the IV. However, this paper focuses on the organizations' observable actions contributing to the IV rather than organizational factors leading to the IV.

Journalistic perspective of the IV

Organizations have utilized media gagging to conceal information from the public. This allows them to hide behind a screen of information blackout. Mackey (2014) described the information blackout as an information suppression effort to conceal facts from the public, while Babchenko (2008) argued it to be voluntary or enforced censorship. With the internet and social media allowing widespread access to all, enforced censorship or media gagging is nearly impossible to enforce (Gruber *et al.*, 2015; Mackey, 2014; Pang, 2013a; Penuel *et al.*, 2013). Thus, it may be reasoned that the IV is due to deliberate self-censorship. Journalism perceives the IV as a news vacuum arising from surveillance limitations (Hermida, 2012) with the media reducing its reliance on audience-generated content as soon as news professionals provide coverage (Bruno, 2011). This suggests that the IV is media driven rather than public driven (Marra, 2004). With the increase of user-to-user dissemination (Lindsay, 2011) or information surrogates like online eyewitness accounts, photos, videos, and real-time social media status updates forming the news vacuum (Hermida, 2012), this suggests a public-driven dimension to the IV. Hence, there is a need to study social media's roles and effects on organizations during crises.

IV as mediated social pressure

To avoid legal complications, criticisms, or investigations that could worsen a crisis, some organizations adopt intentional silence by shunning media queries with use of the phrase "no comment" or remaining silent to avoid lending credence to rumors and speculations (Pang, 2013b). Some believe the problem would dissipate with their silence (Fearn-Banks, 2011; Penuel *et al.*, 2013). Others adopt unintentional silence when they lack confirming information (Dearstyne, 2007; Penuel *et al.*, 2013) or possess mixed information (Bagin and Fulginiti, 2005; Penuel *et al.*, 2013).

As stakeholders' curiosity causes them to prioritize the legacy news media as their primary source of information during a crisis (Pang, 2013b), their demand for answers

motivates the media to fulfill its surveillance role (Heath, 2006) by looking to organizations for answers and turning to other avenues when that fails (Pang, 2013b). Contrary to Babchenko's (2008) belief that "any action inevitably provokes a response; the blow is often returned with the same force" (p. 116), organizations' silence during crises provokes a response intensified by public dissatisfaction and media glare. This results in a "vicious cycle" (Pang, 2013b, p. 209) of societal pressure and informational demand exerted by the media and stakeholders, which births the IV (Pang, 2013b, Penuel *et al.*, 2013). Hence, the IV can be understood as a mediated societal pressure on a troubled organization due to informational demand and supply disparities.

IV as lack of situational favorability

Misinformation and hearsay are formed during the process of information seeking, driven by the need to fill the void (Penuel *et al.*, 2013). The organization's silence and non-committal remarks compound the IV. Susceptible media-reliant stakeholders are exposed to inaccuracies, which affect their mental and emotive perceptions (Mackey, 2014; Pang, 2013b; Penuel *et al.*, 2013). Besides organizational silence, an IV also arises from insufficient or absent essential information and unsatisfactory replies. At the onset of a crisis, adjusting and/or instructing information (Coombs, 2015b) may be needed to soothe emotions. However, in later stages, factual, reliable, and conclusive information is required to satisfy the need for information. This indicates that different information is demanded at different stages of a crisis (Penuel *et al.*, 2013), exemplifying Cook and Brown's (1999) argument that knowledge is created by action rather than mere possession. Thus, the IV is "neither a straightforward lie nor the withholding of facts" (Babchenko, 2008, p. 117), but instead demonstrates the organization's inability to "get the right information to the right person at the right time" (Penuel *et al.*, 2013, p. 529). However, the question of why organizations choose silence remains. Therefore, the first research question examines:

RQ1. Why do organizations remain silent in an IV?

IV as violation of social expectation

The neo-institutional theory states that stakeholders believe organizations' behavior should be consistent with societal norms or expectations (Coombs and Holladay, 2011). Hence, in expounding this theory, an IV could be considered as a violation of societal norms and expectations (Coombs and Holladay, 2011). Moreover, an IV contributes to damage to an organization's image because its silence causes stakeholders and media alike to view the organization as being guilty and/or secretive (Pang, 2013b). As an IV is caused by a lack of information and draws attention away from the crisis toward itself, it can arguably be considered a double crisis (Johansen and Frandsen, 2007). In situational crisis communication theory, a key theory used in analyzing crises (An and Cheng, 2010) offering a list of crisis response strategies based on antecedent factors like crisis history and organization's reputation (Coombs, 2010), the IV can be categorized as a preventable crisis with high attributed responsibility that damages the organization's image. This study further examines two related questions:

RQ2. What happens in an IV and what are its intensifying factors?

RQ3. What leads to the closure or termination of an IV?

Scope of media hype and social media hype

Due to strong feelings created by a crisis, stakeholders yearning for clarity and direction would actively hunt and revisit information sources for updates (Westerman *et al.*, 2014) to

cope with their situation. The publics' persistent information-seeking efforts are proportionately represented by their demands for answers (Coombs, 2006; White, 2009). This supports the earlier notion that a strong informational demand must be reciprocated by the organization. Because of information scarcity, legacy and social media then become vital sources of crisis information (Coombs, 2014; Johnson and Kaye, 2010). This results in two phenomena: media hype and social media hype.

Media hype. Media hype is defined as a "media generated, wall-to-wall news wave, triggered by one specific event, and enlarged by the self-reinforcing processes within the news production of the media" (Vasterman, 2005, p. 515). During which, the salience of interpretations, definitions, emphases, presence, and absence of information are intensified by secondary-level agenda-setting (White, 2009). This generates a media hype that is either magnified, employing relevant, in-depth, and episodic reporting, or enlarged, which utilizes broad thematic reporting (Vasterman, 2005). Vasterman (2005) argued that four conditions must be present for a media hype to occur: a key event that receives much media attention; a rapid rise and gradual fall of a news wave; the media keeping the news in the headlines instead of reporting new developments in the news by churning "comparable incidents or linking them to key event" (p. 516); and an interaction between the media and newsmakers resulting in increased coverage of "social action" and "reactions from social actors" (p. 516).

Social media hype. Building on media hype is social media hype, defined as a "netizen-generated hype that causes a huge interest that is triggered by a key event and sustained by a self-reinforcing quality in its ability for users to engage in conversations" (Pang, 2013a, p. 309). This involves "a trigger event, followed by interest waves, and sustaining of the interests on different social media platforms" (Pang, 2013a, p. 309). Rapid advances in communication technologies have exponentially improved connectivity, enabled two-way crossovers of hypes across platforms, and provided additional crisis "breeding grounds" (Pang *et al.*, 2014, p. 97). As social media becomes increasingly crucial for individuals and organizations to seek, create, and share content that reaches out to a wide audience (Penuel *et al.*, 2013; Westerman *et al.*, 2014), it allows issues to gain traction and develop into a social media hype. Due to experiential and emotional resonance, stakeholders are motivated to create content and share their experiences, emotions, and thoughts, which magnifies the hype due to the medium's reach and stakeholders' vast relational connections (Austin *et al.*, 2012; Pang, 2013a).

Concept of the IV lifespan

At present, there is no research indicating how long an IV will last (Pang, 2013b). However, it has been established that an IV is sustained by both the media hype and social media hype. A media hype is expected to last about three weeks (Vasterman, 2005; Wein and Elmelund-Praestekaer, 2009), while a social media hype experiences fatigue after two to three interest waves (Pang, 2013c). Hence, it is reasonable to say that an IV's lifespan hovers between the duration of these two phenomena. This study thus further examines the following:

RQ4. What happens when an IV remains unresolved?

RQ5. What are the stages within an IV?

Method

Limited research on the IV prompted this exploratory study to adopt Wan *et al.*'s (2015) case study method. In order to encourage greater rigor in the study, the cases were examined using Mann's (2003) cross-sectional method to obtain greater prevalence and identification of associations. According to Mann (2003), cross-sectional studies are used to determine

prevalence, which is the number of cases at a given point in time, and is a crucial factor to explore because it vastly affects the possibility of any phenomenon and the “predictive value of any investigation” (p. 56). It is used to infer causation, whereby the researcher can determine whether stakeholders were exposed to a certain phenomena or exhibited a particular behavior (Mann, 2003) at different stages of the crises.

Data collection: case selection and sources

Five international cases were selected based on the following selection criteria: the organizational crisis must experience an IV due to either its inadequate initial response or its lack of response; an IV must have existed for a period of time; for the purpose of range and diversity, only one case is selected per country; the cases should occur no later than five years before this study; and it should display media hype on at least two legacy media.

The summary of the five identified cases and data is presented in Table I. The search for relevant articles pertaining to the respective crises was conducted on Factiva and two sources with the largest number of articles on the crises were chosen. This was followed by a search on the official social media platforms of the organizations involved for posts and comments on the respective crises. In cases where the search yielded little to no result, data were collected from public social media platforms; for instance, comments were collected from Hardwarezone’s forums for the case involving Singapore.

We were unable to collect data uniformly from a single social media source as we discovered that some online platforms do not yield sufficient data for analysis. For example,

Cases	Descriptions	Data Source and Volume
Fonterra (New Zealand)	On August 3, 2013, New Zealand’s dairy conglomerate had a massive recall due to a possible botulism contamination. It triggered accusations of the company withholding prior information and only informing the government two days later	90 online articles from <i>The New Zealand Herald</i> 35 online articles from <i>The Press</i> (Christchurch)
Maggi (India)	On April 30, 2015, Maggi noodles faced a recall after high lead and monosodium glutamate levels were found in the testing of a sample batch. After posting an official answer on its website and Facebook, its parent company kept quiet for weeks before further action	8,994 tweets from Twitter 170 online articles from Press Trust of India 170 online articles from <i>The Times of India</i> 835 comments from New Delhi Television Limited’s (NDTV) Facebook page
Singapore General Hospital (Singapore)	On October 6, 2015, SGH revealed 25 patients and seven deaths between April and June 2015 were connected to a hepatitis C virus infection within the hospital. SGH suspected the use of multi-dose insulin vials might have been responsible for the infection	34 online articles from Channel NewsAsia 73 online articles from <i>The Straits Times</i> 548 comments from Hardwarezone (public forum)
Sony (USA)	On April 14, 2011, Sony discovered its system was hacked and took the PlayStation Network (PSN) offline for security and diagnostic reasons. Sony broke its silence six days later when it replied on its blog that the PSN would be under maintenance, fueling subscribers’ suspicions	42 online articles from <i>PC Magazine</i> 23 online articles from <i>The Washington Post</i> 13,062 comments to 19 official blog posts on Sony PlayStation (North America)
MH370 (Malaysia)	On March 8, 2014, when flight MH370 failed to arrive in Beijing, Malaysian Airline System (MAS) released a statement on its official Facebook page announcing its disappearance. While multiple parties had made attempts to locate the missing plane, the underlying causes remain unanswered	7 online articles from <i>Berita Harian</i> 16 online articles from Bernama Daily Malaysian News 379 comments to 6 official posts on Malaysian Airlines’ Facebook page

Table I.
Summary of cases
and data

in Sony's case, the organization communicated to its stakeholders through its official blog, where netizens converged to express their sentiments, while its Facebook page was used to communicate product launches and did not carry any news of the crisis. In the case of MH370, Malaysia Airlines' Facebook posts had reasonable social media hype. In the case with Singapore General Hospital (SGH), the organization's Facebook posts exhibited weak social media hype in comparison to a stronger hype on a public forum. In Fonterra's case, the social media hype was stronger on Twitter than Facebook, which justified our data collection from Twitter. Likewise, there was greater social media hype on New Delhi Television Limited's Facebook page than on Maggi's Twitter or Facebook page.

The collected data were archived chronologically and three databases, which formed the basis for examination using the cross-sectional method to establish common patterns and behaviors, were established: articles from legacy media; social media posts by the organizations; and online responses from stakeholders in response to the crisis.

Data analysis

To identify the key stages according to Glaser and Strauss' (1967) constant comparative method for inductive data analysis, the collected data were analyzed using the four stages: comparing the incidents in each case; integrating the categories; delimiting the theory; and writing the theory.

Comparisons of online articles and stakeholders' responses on social media for each case were made to investigate: how the crisis began; the organizations' initial and subsequent response(s); reactions from the public; and the eventual outcome of the situation. These categories form a partial framework of what Glaser and Strauss (1967) described as "local" concepts (p. 45) that provided the starting points for this study. The data collected from each case were used to establish "initial evidence" (Glaser and Strauss, 1967, p. 23). From the data, additional emergent categories that serve as concepts to illuminate the concept surfaced. Inductive thinking was employed as this functioned well in generating categories when there was a lack of knowledge about a phenomenon (Elo and Kyngäs, 2008). Based on Glaser and Strauss' (1967) recommendation, the study identifies emergent categories to retain theoretical sensitivity before merging with existing concepts. Continuous comparisons among the data to identify areas of similarities and differences helped establish the characteristics of the categories and enhanced their explanatory abilities. The conceptual categories generated from the data were then used to illuminate the concept of the IV.

For instance, for *RQ1*, the steps where evidence was unearthed included:

- (1) The initial evidence was that the five organizations were silent during their respective crises. Data supporting that observation included descriptors like "the firm first identified a possible 'quality issue' in March" (Wade *et al.*, 2013) for the Fonterra crisis; "day five of Sony's PlayStation network dawned Monday ... Sony confirmed last Friday that the protracted downtime was in response to an apparent hacking attempt" (Hachman, 2011) for the Sony crisis; "barring a solitary press release in two weeks, the company ignored the issue" (*The Times of India*, 2015c) for the Maggi crisis; "the Workers' Party has asked the Ministry of Health why it took four months to release information about the spread of hepatitis C" (Khalik, 2015b) for the SGH crisis; and "no indication of Malaysia Airlines (MAS) flight MH370 ... been reported missing more than 24 hours ago" (Bernama Daily Malaysian News, 2015b) for the Malaysia Airlines crisis.
- (2) These were used to comparatively identify the presence and duration of organizational silence during the crises. Subsequently, descriptors such as "Mr Joyce said Fonterra blamed 'procedural issues' for the communication delays" (Wade *et al.*, 2013), and "do not test for clostridium botulinum at that stage" (Moore, 2013) for the Fonterra case;

“MOH explained that it lists only acute cases ... This was why it had not reacted to the earlier reports of hepatitis C ... they were classified as chronic” (Khalik, 2015c) for the SGH case; and “waited to tell consumers about the leak until it fully understood the scope of the problem” (Tsukayama, 2011b) for the Sony case were used to explore why organizations adopted silence and the type of silence used during crises.

- (3) Subsequently, the phenomenon observed were comparatively examined to identify properties such as “prudence” (Sony), “limitations” (MH370, SGH, and Sony), and “bureaucracy” (Fonterra) that served as emergent concepts.
- (4) Once the data were verified, the various natures of the multiple emergent concepts were inductively derived to examine the organizational silence.

Findings and discussion

RQ1 examined why organizations remained silent in an IV. Both natural and strategic silences were identified from the cases. This study defines silence as a lack of communication from an organization or its failure to provide clear and adequate responses to questions and concerns raised. Natural silence is defined as arising from unfavorable situations, obstacles, and limitations that prevent an organization from swiftly obtaining and disclosing essential information to stakeholders (Penuel *et al.*, 2013). For example, the protracted silence by Fonterra, Maggi, and SGH was due to the complexity of their food and health crises, where contamination and infection were inherently difficult to identify and verify, and required time-consuming laboratory tests to ascertain. Similarly, Sony experienced natural silence due to the intricacy of its network issues as it struggled to understand its digital crisis. Conversely, the investigators and authorities involved in MH370 were limited to providing updates and adjusting information without any definitive answers to questions due to the lack of information. Thus, rather than strategically adopting silence, it appears that organizations were unwittingly “forced” into silence.

Aside from natural silence, in order to reduce the risk of miscommunication during a crisis, some organizations adopted strategic silence, which manifested as them keeping communication to a minimum while working to obtain information to share later. For instance, when Sony was questioned on its eight-day delay in notification of the security risk, the organization replied that it “waited to tell consumers about the leak until it fully understood the scope of the problem” (Tsukayama, 2011b). Similar attempts were observed in the cases of Fonterra and SGH. When Fonterra detected botulism bacteria in March 2013, it began testing and verifying the exact strain until July (Moore, 2013) before it broke its silence. Likewise, SGH took months to identify subsequent cases of hepatitis C infection from its first cluster detection (*The Straits Times*, 2015c). Such actions indicate that the organizations had the intention to resolve the publics’ knowledge gap by working to provide answers that they were initially unable to give. It also suggests that these organizations had incomplete important information that they were unable to release publicly, even at the potential cost of endangering stakeholders, until they understood the situation. Other demonstrations of strategic silence included a one-day silence on April 24, 2011 when Sony called in a second computer security company to determine the issues with its network (Williams, 2011), as well as Sony’s and Maggi’s preserving silence (Dimitrov, 2015), where they addressed stakeholders via social media. Preserving silence accentuates the presence of strategic silence as it grants information or communication lower visibility by situating it beyond the immediate periphery of most stakeholders (Dimitrov, 2015). It is achieved by harmonizing “silence and voice, visibility and invisibility” (p. 646), which suggests one “(does) not talk about it because it has not been part of the rhetoric, but there is no reason why it should not become part of the rhetoric” (Dimitrov, 2015, p. 646). Table II summarizes the causes and duration of the IV.

Having discussed the two types of silence, there is the danger of confusing strategic silence with evasive silence. Evasive silence manifests when an organization deliberately maintains silence indefinitely until the crisis goes away (Penuel *et al.*, 2013; Fearn-Banks, 2011) or it is forced to speak up. However, such silence was not observed in this study as the five organizations eventually spoke up.

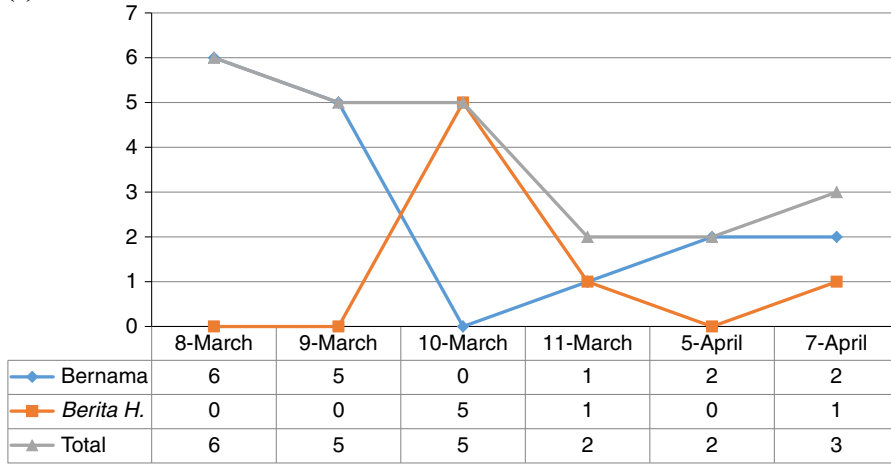
RQ2 looked at what happens in an IV and what the intensifying factors are. The five organizations were blamed for their inadequate initial responses and silence, which increased stakeholders' distress and anxiety, and even led to wild speculations in the instances of MH370, Maggi, SGH, and Sony. For example, in the case of MH370, there were rumors of the plane landing in Nanning (Malaysia Airlines, 2014) or crashing into the sea (Yip, 2014), as well as speculations of mid-air explosions, bad weather, terrorism threats, and hijacks (Bernama Daily Malaysian News, 2015a). This was exemplified by the sharp increase in comments made on March 8 (see Figure 1(b)). In Maggi's case, several believed corruption and bribery, involving the organization and government officials, caused the crisis (Pune, 2015; Sengar, 2015). In the cases involving Maggi and MH370, the persistent lack of information soured the initially supportive online sentiments as netizens became increasingly frustrated, which caused them to question the organizations' capabilities. Likewise, delayed communication by Sony and SGH caused stakeholders to question the organizations' legitimacy and honesty. This resulted in other voices chiming in and intensifying the antagonistic online stance against the organizations as shown by SGH's peaked social media hype (see Figure 2(b)) and Sony's growing social media hype (see Figure 3(b)).

Forum users speculated that SGH's hepatitis C outbreak was caused by a disgruntled nurse who was dismissed from the hospital for his seditious social media posts (Kindaichi83, 2015; Satayxp, 2015). Several netizens even suggested that the hospital deliberately delayed announcing the crisis so as not to affect the ruling party's performance during the national elections (Jedihaan, 2015; Mancunian2, 2015; Miaoyin, 2015; MrCoconut, 2015). Speculations and accusations were the main drivers of SGH's social media hype (see Figure 2(b)), which began as a peak because a crisis of such scale involving a reputable hospital had previously been inconceivable in Singapore. In Sony's case, the lack of information led several to assume either Anonymous, the hacker group that had earlier attacked the organization, was responsible for the crisis or that Sony was "botching something on their end" (Nahela, 2011). Although Figure 3(b) showed an escalating social media hype that peaked on April 23, there was a fair amount of social media support for Sony found within the hype. This observation was supported by Hachman (2011), who reported that stakeholders were "full of praise" for Sony "who simply posted [...] with no real news" (paragraph 2). In both cases, the presence of supportive stakeholders served to ameliorate hostile sentiments as they urged agitated netizens to be reasonable and rational, reminded others of the organizations' efforts and

Table II.
Causes and duration
of information
vacuum of cases
studied

Cases	Crisis difficulties	Approximate vacuum duration
Fonterra	Exact strain of botulism bacteria and its lethality are difficult to identify	Approximately 5 months
Maggi	Multiple nationwide tests to ascertain safety of Maggi's noodles for consumption yielded disparaging results	Approximately 3 weeks
MH370	Absence of plane wreckage and inability to locate the plane's black box	Approximately 2 years and 11 months
SGH	Protocols were not designed for detecting unusual and unfamiliar outbreaks, and some traits of the hepatitis C virus make it hard to detect	Approximately 4 months
Sony	Exact nature of external intrusion of the network was unknown. Forensic analysis requires days of thorough investigation	8 days

(a)



(b)

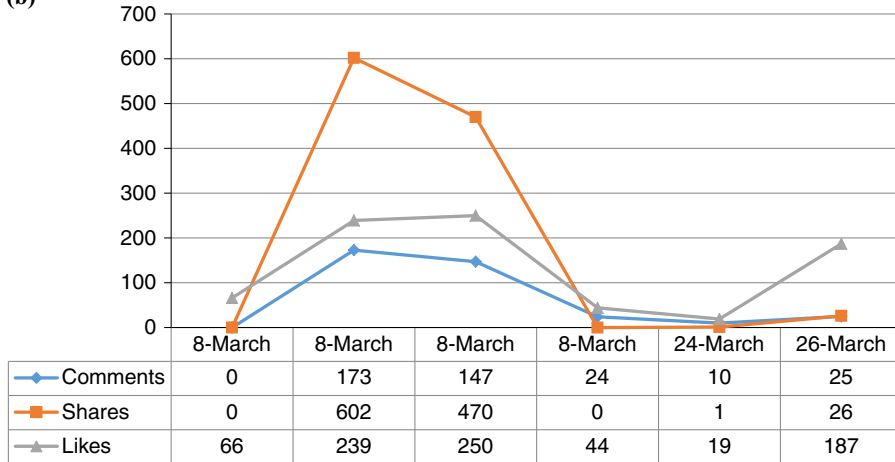


Figure 1.
MH370

Notes: (a) Legacy Media; (b) Malaysia Airlines Facebook

limitations, and served as a voice of reason against unfounded accusations, conspiracies, and assumptions, which kept online intensification of the IV in check.

The dissemination of conflicting messages by Fonterra, Maggi, and Malaysia Airlines created more questions, confusion, and frustrations, which weakened the stakeholder's confidence. For example, stakeholders were initially informed of the recall of Stage 2 Karicare formula and were advised to switch to the Stage 1 formula. But Fonterra's delayed communication to the Ministry of Primary Industries caused the government to create an impression of providing conflicting messages when it announced that Stage 1 products were affected too (Wade and Eriksen, 2013). Parents, who were vexed by this, commented that "just because there's been a cock-up at Fonterra doesn't mean there has to be a cock-up in how the information is detailed" (Wade and Eriksen, 2013) and "I blame Fonterra for failing to notify the Government and the public as soon as they knew of the

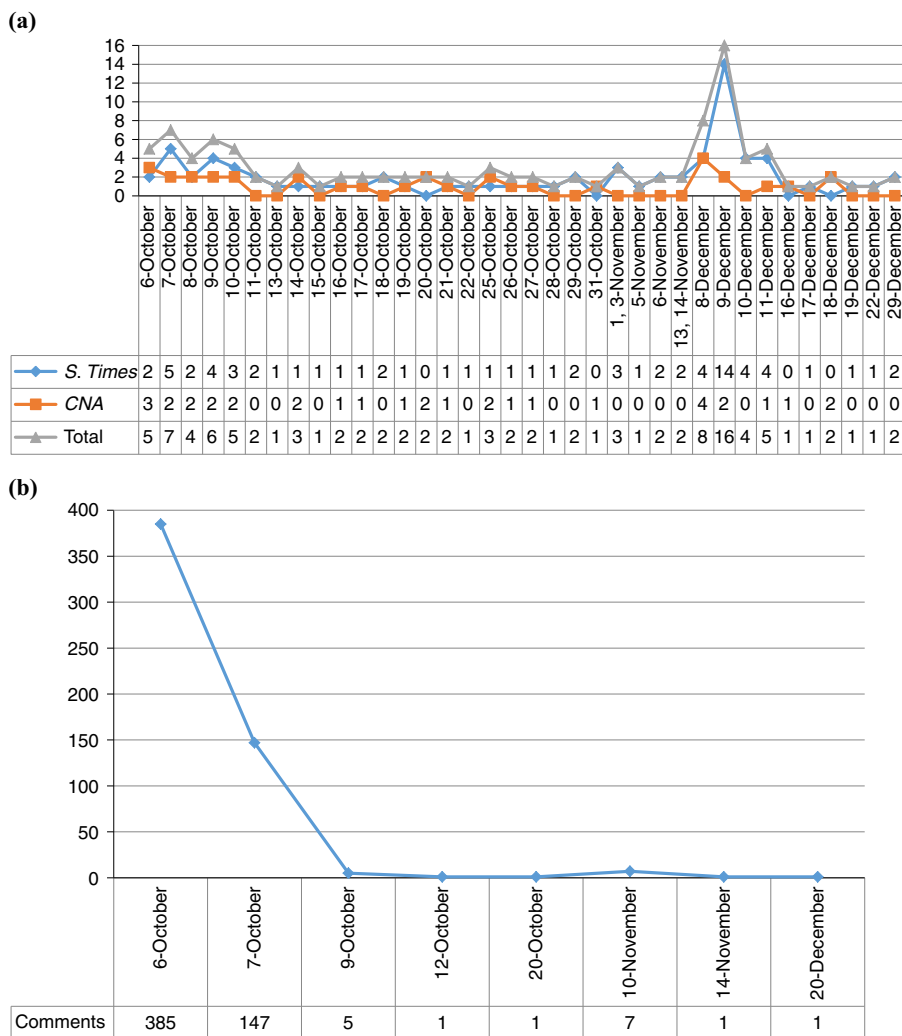


Figure 2.
SGH

Notes: (a) Legacy Media; (b) Hardwarezone Forum

contamination” (Wade and Eriksen, 2013). This caused a five-fold increase in media hype between August 4 and 5 (see Figure 4(a)), and an increase of more than two times in social media hype, which peaked on August 5 (see Figure 4(b)). Similarly, confusion was apparent when commissioner Harshdeep announced that the samples from Mumbai contained permissible levels of lead on June 8, but Minister Bapat later declared the ban stating that three samples had high levels of lead (*The Times of India*, 2015d). Surprisingly, Figure 5(a)-(b) showed a decline in media hype and social media hype between June 8 and 30. This could be due to news of Maggi being banned in multiple states, subjected to intensified tests, and removed from shelves.

In the case of MH370, there was initial conflicting information as to when the plane was last heard, the ambiguity regarding the plane’s crash or landing, speculations of hijacks by

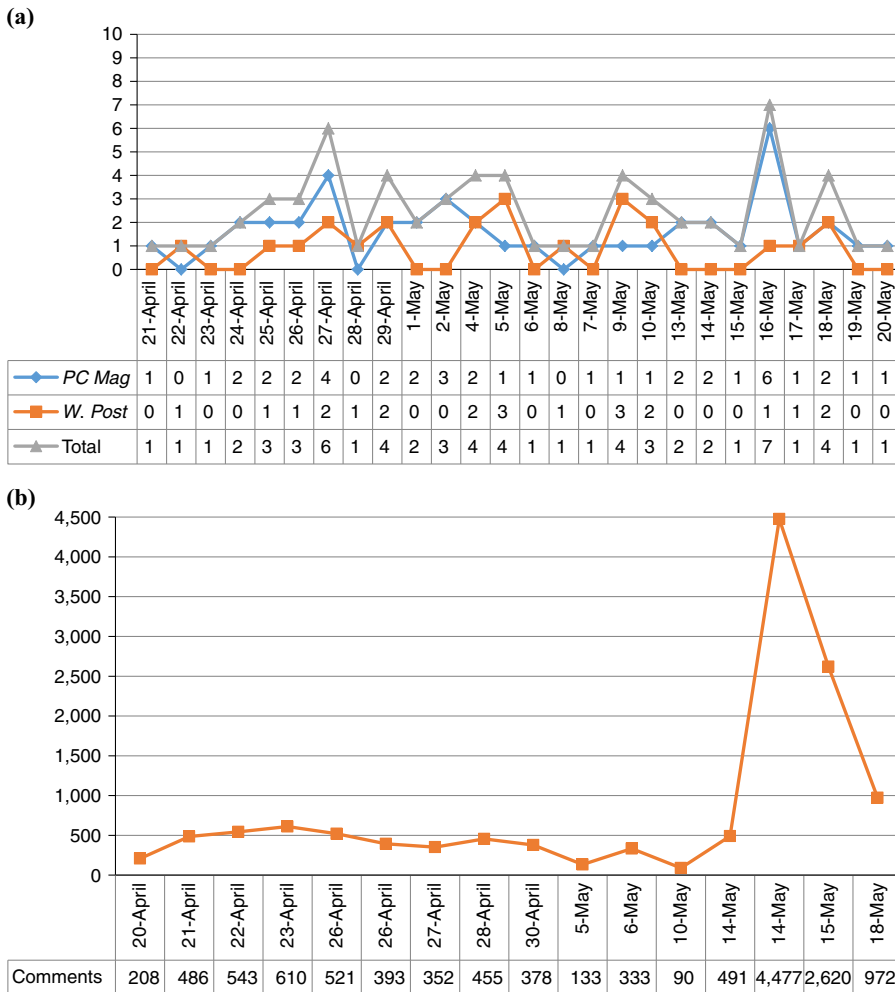


Figure 3.
Sony PlayStation

Notes: (a) Legacy Media; (b) Official Blog

passengers with stolen passports and of the plane turning back to Malaysia, and confusion caused by smoke and oil slicks in Vietnamese waters, and debris separately reported by Japan, China, Thailand, Australia, and Vietnam. These led to a commonly observed spike on social media during the early stages of the IV (see Figures 4(b), 5(b), 2(b), 1(b)), where extreme views, speculations, and rumors sustained and amplified the social media hype by gaining other stakeholders' attention, prompting more questions and views, and weakening the organization's narratives.

Another intensifying factor identified was the government's involvement or intervention. Crises invariably attract scrutiny from authorities (see Pang, 2013d). The official investigations and inquiries conducted could raise additional questions that could enlarge the IV. For example, when Sony released information that stakeholders' personal information was compromised (Seybold, 2011), Representative Markey demanded that Sony

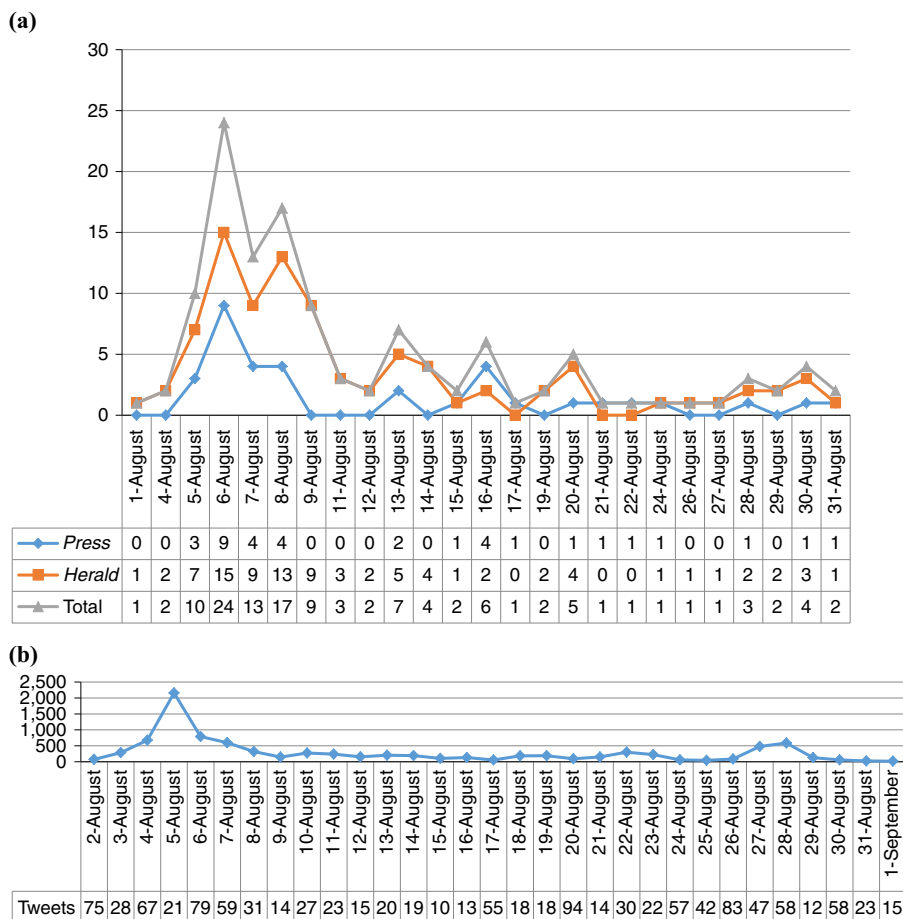


Figure 4.
Fonterra

Notes: (a) Legacy Media; (b) Twitter

explain why the data were not encrypted and its plans to protect compromised stakeholders (Albanesius, 2011). The New York Attorney General also issued a subpoena to obtain more information on how Sony protects its stakeholders' data (Tsukayama, 2011d). Although the authorities' intervention resulted in a media hype peak on April 27 (see Figure 3(a)), a trough in social media hype (Figure 3(b)) was observed as stakeholders were more concerned with the restoration of the PlayStation Network for gaming purposes.

Similarly, the Ministry of Health released a timeline on October 8 to summarize the events leading to SGH's announcement of the hepatitis C outbreak within SGH (*The Straits Times*, 2015b), which resulted in more questions (Khalik, 2015c) and speculations of whether "protectiveness and scenario-planning" or "pressures, external or self-imposed, that had made civil and public servants ... leave their political leaders out of the loop until the elections were over" (Chang, 2015). Subsequently, the Ministry of Health established an independent review committee to "provide a critical review of SGH's investigation and findings" (Khalik, 2015a). Surprisingly, similar to Sony's case, Figure 2(a)-(b) showed a lull instead of an escalation in media hype and social media hype upon the formation of the

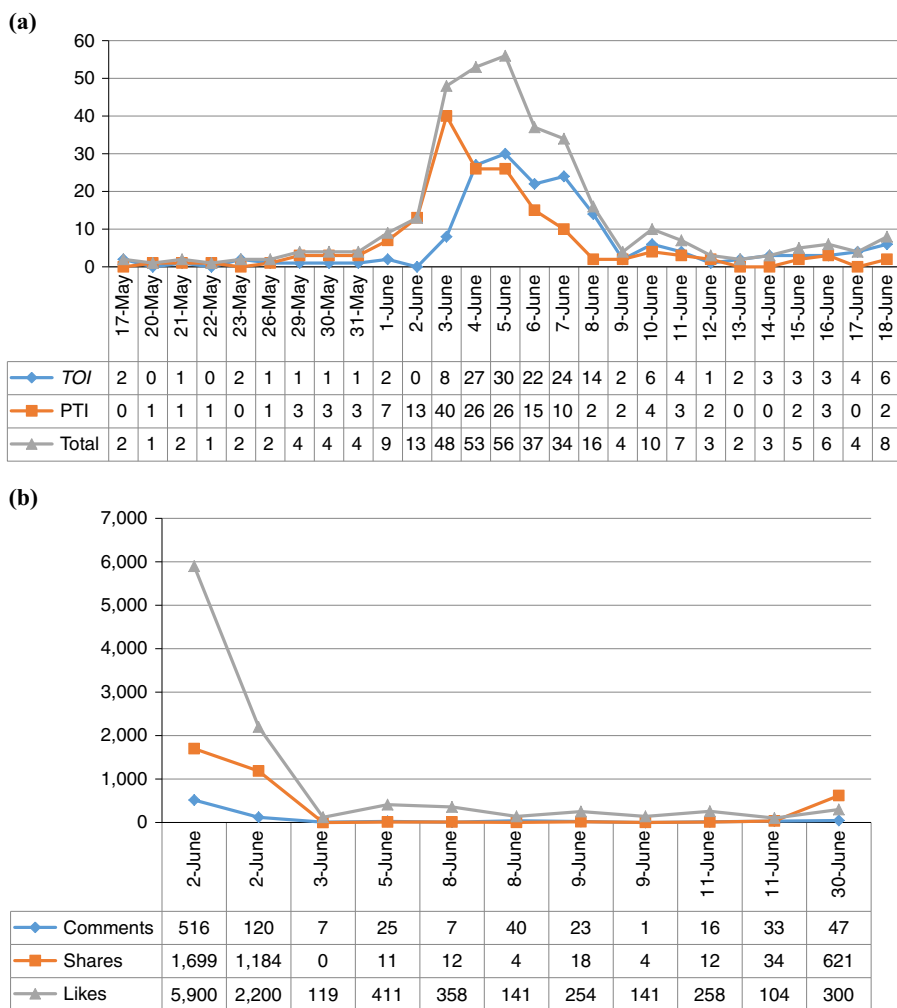


Figure 5.
Maggi

Notes: (a) Legacy Media; (b) NDTV Facebook

review committee. This could be due to netizens theorizing that the relatively silent media was “giving face” to the organization and authorities (Laneige, 2015), and stakeholders were keeping quiet or had forgotten about the issue (McBoogerballs, 2015; Treeskull, 2015). Conversely, in MH370’s case, the provision of diverse information by multiple governments and agencies, rather than a single coherent voice by Malaysia Airlines, led to confused communication and frustrated stakeholders.

The findings also demonstrated that related parties would distance themselves from the affected organization to avoid being incriminated with wrongdoing or protect their reputation. In the five cases, distancing was exemplified by Amitabh Bachchan stating that he had stopped endorsing Maggi (Press Trust of India, 2015; *The Times of India*, 2015a); Changi General Hospital, Tan Tock Seng Hospital, and the National Kidney Foundation insisting they had stringent safety protocols in place (Channel NewsAsia, 2015; Lai, 2015a);

Fonterra's business partner, Nestlé, claiming that its products were unaffected as it did not purchase any of the recalled products (Sethchemz, 2013); and Anonymous, a group of hackers who had previously hacked Sony, denying responsibility for the incident (Tsukayama, 2011a). As a result of distancing, certain areas of speculations were closed, which narrowed and refocused the media's attention on the organizations, their unresolved issues, and intensified calls for answers. For example, when other medical organizations distanced themselves from the hepatitis C limelight, the media regularly reminded readers of SGH's delayed communication to the relevant authorities, and its procedural and communication lapses. In the cases of Maggi and SGH, the distancing of related parties led to a shift in sentiments but did not result in any significant spikes in social media hype as shown in Figure 5(b) and Figure 2(b). Similarly, stakeholders renewed their call for Sony to state when the network would be back online, compensation for the inconvenience caused, and culprit(s) responsible for the intrusion. This caused the social media hype to peak on April 23 (Figure 3(b)), a day after Anonymous distanced itself from the issue (Yin, 2011).

RQ3 explored the factors leading to the closure or termination of an IV. The IV is essentially a knowledge gap that is constructed and sustained by unanswered questions and issues. Its reduction or closure is heralded by: the provision of answers, information, and enhanced preventive measures (Fonterra and SGH); releasing plans for compensation and restoration to operational normalcy (Sony); and the provision of evidence to show product safety was not compromised and stakeholders were never at risk (Fonterra and Maggi). When test results showed Fonterra's botulism scare to be a false alarm and Sony announced the restoration of its network, Figure 4(b) and Figure 3(b) showed a final spike in social media hype, in which stakeholders generally expressed relief. This means that a spike in social media hype could also signify the resolution of an IV and the crisis.

Government interventions and involvement of authorities aided in the termination of the IV as official investigations expedited the process of finding answers. This means that governments may intervene not only when organizations are suspected of withholding information from stakeholders, but also to expedite the process of gathering information and sense-making to swiftly quell public dissatisfaction and safeguard stakeholders' well-being. An independent inquiry for Fonterra provided stakeholders with an understanding of "things that went wrong" (Independent Inquiry for Fonterra Board, 2013, pp. 5-6) with 23 operational and ten governance recommendations for improvements (Independent Inquiry for Fonterra Board, 2013). In SGH's case, an independent review committee ruled out "drug diversion, foul play or sabotage, and contaminated medical products," and concluded the cause of the hepatitis C outbreak to be poor infection prevention and control measures (Lai, 2015a, paragraph 2). A new task force was also established to improve the monitoring and discovery of infectious diseases (*The Straits Times*, 2015d) to prevent the recurrence of such infection. When the independent review committee provided answers to the crisis on December 8, the media hype peaked the next day (Figure 2(a)) but social media hype remained low (Figure 2(b)). This could be due to Singaporeans' trust in the local media for updates and the government to be accountable to stakeholders. Thus, even when an organization initially fails to "get the right information to the right person at the right time" (Penuel *et al.*, 2013, p. 529), provision of information that answers questions provides stakeholders closure and helps to terminate the IV.

RQ4 studied what happens when an IV remains unresolved. Fonterra and Sony were found to have some unanswered questions remaining after the closure of their respective crises, which constituted to the continued existence of an unresolved IV. Like MH370, Sony was still unable to reveal the culprit(s) responsible for its network outage in 2011. Meanwhile, Fonterra had to explain to an inquiry its five-month silence that occurred between the detection of the botulism contamination and the crisis outbreak, delayed communication to the government, the processes it went through upon detection of the

contamination, and its overall approach to the crisis (Trevett, 2013). Unlike in the cases of Maggi and SGH, some unanswered questions remained even with the resolution of Fonterra's and Sony's crises, suggesting that it was questions regarding compromised (food, credit, or human) safety and restoration to operational normalcy that sustained the phenomenon. This means that unanswered questions do not bear equal weight in an IV; some are prioritized for simultaneous IV and crisis resolution (Maggi and SGH), while others are allowed continued existence beyond their crises' closure and sustained by strategic (Fonterra) or persistent natural silence (MH370 and Sony).

This study proposes the "Information vacuum hibernation model" (Figure 6) to explain what happens when an IV remains unresolved. When an IV is unresolved and sustained by both natural and strategic silence, the organization cannot afford to remain in a state of crisis for extended periods of time as it needs to recover and restore itself to normalcy. In MH370's case, the search costs \$200 million (Joint Agency Coordination Centre, 2017) but yielded little result. Eventually, the authorities terminated the investigation without proper resolution and allow the IV to hibernate in limbo. For example, the search for the missing plane utilized the assistance of at least six countries – Australia, New Zealand, the USA, Japan, China, and the Republic of Korea (Australian Maritime Safety Authority, 2017) – in a search area of 120,000 square kilometers and yielded the discovery of 33 pieces of wreckages (Australian Broadcasting Corporation, 2017). Whenever there were new developments or discoveries that could provide answers, such as the discovery of parts and debris, media and stakeholders' interest in the issue would be revived. Similarly, interest revives whenever there are articles on the arrests of suspects related to cyber attacks on Sony. This led the phenomenon to continue existing in alternating states of hibernation and revived interest until answers are provided for its resolution, as demonstrated in the model below.

RQ5 examined the stages within an IV. From *RQ1-RQ4*, we had systematically examined the IV from its beginning to resolution and beyond. As such, four stages were observed: "beginning, escalation, resolution, and limbo" (see Table III). These stages are not

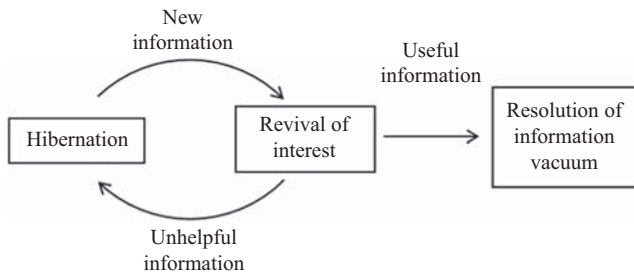


Figure 6.
Information vacuum hibernation model

Beginning	Escalation	Resolution	Limbo
No response/denial/no more information Provision of only instructing and/or adjusting information Inadequate information/misinformation Loss of trust, speculations, rumors, frustration, and demands for answers	Media hype Distancing by related parties Wrong/conflicting/information Delayed communication Rumors/speculations Government intervention Decline in media hype Moderation of social media sentiments	Press conferences Plans for restoration to operational normalcy and compensation Investigations/inquiries/test results Government intervention Loss of trust, speculations, rumors, frustration, and demands for answers	Crucial questions remain unanswered Potential resurgence of media and stakeholder interest

Table III.
Stages of the information vacuum

chronologically progressive, but exist as periods within the IV such that all organizational crises will start with the beginning stage but may terminate at different stages, as demonstrated by the five cases.

The beginning stage manifests along with the birth of a crisis when questions arise and it is represented by a prominent silence from the organization. For instance, prolonged silence was apparent in Maggi's case as the organization kept quiet for over 21 days (Nestle Website, nd.), while Sony's long silence was interrupted only by a single announcement of instructing information. In the cases of Fonterra and SGH, their period of silence began after providing misleading information and erroneous recall notices by Fonterra, and speculations by SGH without confirmation of the cause of the Hepatitis C outbreak. In the case of MH370, its silence was due to the mystery surrounding the plane's disappearance and the lack of evidence. While some of these organizations had issued initial statements early in their crises, their silence and lack of action were pronounced, which led them into the escalation stage.

In the escalation stage, the IV is exacerbated by several intensifying factors and represented by mounting criticisms in legacy media reports and negative social media sentiments. The first factor is the lack of information on the crisis, as demonstrated in MH370's case. The information shared was repetitive and obsolete, and the organization attempted to utilize speculation to answer questions (Eleftheriou-Smith, 2014; Malaysia Airlines, 2014). Second, attention on the crisis surges when the media hijacks the crisis. In Maggi's case, the media offered differing angles on the crisis, such as police lodging action against endorsing celebrities (Jha, 2015), more states banning Maggi (*The Times of India*, 2015e), Maggi's recall (*The Times of India*, 2015b), and political debates over its ban (Ambardar, 2015). Third, the reactions of the stakeholders are another influential factor that escalates a crisis. In some cases, organizations had visible support from their stakeholders (e.g. Sony), while others experienced distancing by relevant industry players and stakeholders, which further damaged the organization's image. For example, former Maggi Spokesperson Amitabh Bachchan clarified that he was no longer an endorser of its products (*The Times of India*, 2015a). Similarly, hacker group Anonymous denied the responsibility for the intrusion of Sony's systems (Tsukayama, 2011c). During the SGH crisis, Changi General Hospital, Tan Tock Seng Hospital, and the National Kidney Foundation distanced themselves from SGH by reassuring the public of their safety procedures (Lai, 2015b). Another form of escalation takes place when governments or authorities are called on or see fit to intervene, such as the Chinese Government's intervention in the Fonterra crisis (*The New Zealand Herald*, 2013).

The limbo stage occurs when an organization, due to limitations and obstacles, persistently remains unable to provide clear, adequate, and satisfactory answers to the main questions and concerns raised by the media and stakeholders during the earlier stages of the crisis. This stage is exemplified in the case of MH370 by the lack of crucial evidence preventing the organization from obtaining any useful or meaningful information to provide to the public in order to close the vacuum. Mechanisms of this stage were explicated earlier in RQ4.

However, it is insufficient to merely identify and discuss the stages of an IV. Hence, to add value to this research, the "Information vacuum development flow chart" (Figure 7) was conceptualized to map the four different types of developments that could happen during a crisis: Type 1 (beginning, escalation, and resolution); Type 2 (beginning, escalation, and limbo); Type 3 (beginning, escalation, limbo, and resolution); and Type 4 (beginning and resolution). All configurations include the beginning stage, with Types 1-3 sharing the beginning and escalation stages, but branch out to different stages thereafter. The escalations experienced by the five organizations indicated they had failed to understand that clear, adequate, and satisfactory information is still required at all stages of a crisis (Penuel *et al.*, 2013).

Type 1 (beginning, escalation, and resolution)

This type applies to all the cases studied, except MH370. In Type 1, resolution is the final stage and is typified by the organization's satisfactory response or actions, which resulted in a corresponding moderation of media and/or stakeholder tone, and/or a decline in media hype and social media hype. For example in the cases of Fonterra and SGH, government intervention and enquiries alleviated the stakeholders' worries and provided answers to the IV. This in turn suppressed the media hijacks in the Fonterra case, while the inquiry results culled speculations with verified answers in the SGH case. Another observation in the resolution stage is the resumption to operational normalcy – Sony's restoration of the PlayStation Network after 26 days of downtime (Tsukayama, 2011f) resolved concerns regarding the offline network and terminated speculations regarding the restoration and further vulnerabilities of the system (Tsukayama, 2011e). Moreover, Sony's compensation plans and measures against identity theft facilitated the hacking crisis's resolution, effectively addressing the stakeholders' worries. The developments of the IV of the four cases – Sony, Maggi, SGH, and Fonterra – are illustrated in Figure 8.

Type 2 (beginning, escalation, and limbo)

In this study, only the case of MH370 belongs to this IV type. Here, limbo is the end stage, where organizations do not have or are unable to provide answers, as observed in MH370's case when no agency was able to provide concrete information on the location of the missing plane (Tasnim, 2016). When all avenues are exhausted, the crisis gradually becomes stale as the media grows weary of receiving repeated responses while stakeholders similarly experience fatigue from the emotional toll. As interest wanes, the organization allows the crisis to close without proper resolution and the IV enters hibernation. This signifies the IV's transition into limbo and resonates with Pang's (2013b) suggestion of the IV disappearing. The development of the IV in MH370's case is illustrated in Figure 9.

While the IV is hibernating, the crisis' unanswered questions in limbo will resurface if any organization experiences a new crisis of a similar nature, such as the subsequent crash of MH17 from Malaysia Airlines (Nuradzimmah, 2015) or the discovery of unidentified

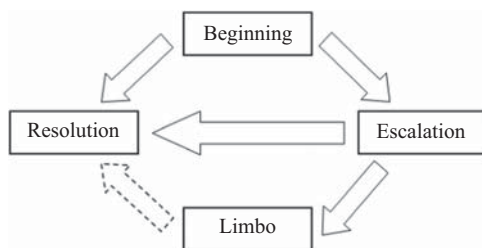


Figure 7.
Information vacuum
development
flow chart

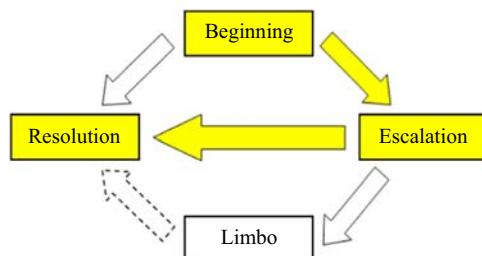


Figure 8.
Information vacuum
development for
Fonterra, SGH,
Sony, and Maggi

airplane wreckage over a year later (Hani, 2015), renewing the stakeholders' and media's memories of the crisis, and re-igniting their interest. Moreover, the reawakened IV could also intensify the IV of a new but closely related or similar crisis (Figure 10). When EgyptAir MS804 went missing on May 19, 2016 (Al Jazeera, 2016), there were many theories and conspiracies drawn to establish connections between MS804 and MH370. One example suggested that the disappearance of MS804 was related to MH370 as both tragedies were exactly 804 days apart (Austin, 2016).

Type 3 (beginning, escalation, limbo, and resolution)

Type 3 is an extension of the Type 2 configuration, where new developments provide answers to the crucial questions and close the IV. For example, it is conceivable that if the black box for MH370 were found, the IV would be closed as necessary information could be supplied to satisfy the stakeholder's demand for answers.

Type 4 (Beginning and resolution)

Type 4 indicates a well-prepared organization with minimal limitation in obtaining and releasing information, which allows it to avoid both the escalation and limbo stages. Hence, Type 4 represents a crisis in which the organization is able to respond swiftly and adequately to the questions raised in the IV, and is recognized as an excellent example of crisis management. Such examples include the quick response by Singapore's People's Association (Wong, 2015) to lapses uncovered by the Auditor General's Office (*The Straits Times*, 2015a) and Burger King's prompt response (CBS News, 2012) regarding errant workers who had posted photos on social media of themselves standing on lettuces in the USA.

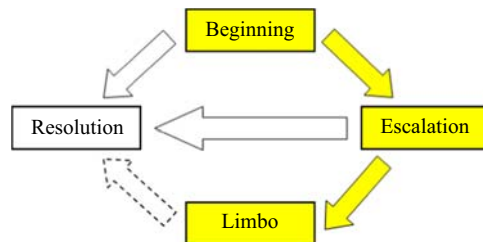


Figure 9.
Information
vacuum development
for MH370

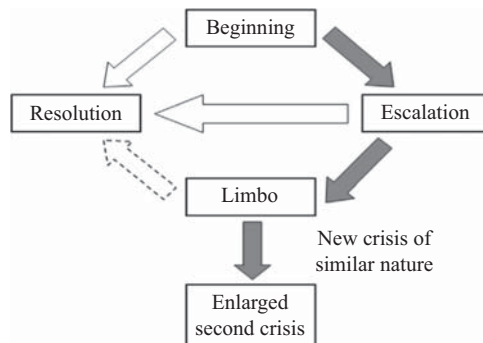


Figure 10.
Expanded information
vacuum development
flow chart

Conclusion

The analyzed cases demonstrated that an organization's first formal response does not necessarily quell the IV but could exacerbate it instead, allowing its continued existence until official replies satisfy the questions and issues raised. Moreover, in the case of MH370, the IV's prolonged existence was due to the nature of the crisis, which prevented the organization from providing closure. The case studies demonstrated that stakeholders are satisfied when organizations provide swift, adequate, transparent, credible, and consistent responses to their queries. Yet interestingly, cases like Sony, where the identity of the hacker remains unknown, show that depending on the crisis and concerns of the stakeholders, not all questions need to be answered by the organization. Nevertheless, the organization should strive to close the IV completely to avoid its reputation and image from being implicated in future similar crises. Based on the findings, we would like to redefine the IV as "a period of persisting stakeholder and media dissatisfaction, and knowledge gaps between the onset of questions arising from a crisis and the organization's official satisfactory response to each of those queries. It is manifested as silence types and exacerbated by the organization's ability and willingness to provide timely and necessary information."

One limitation of this study is the lack of cases featuring organizational evasive silence for better examination of the phenomenon. Another limitation is the lack of cases similar to MH370 for better examination of the interest hibernation-revival cycle, limbo stage, and how a second crisis can expand an existing IV. The third limitation is that we were unable to collect data uniformly from a single social media source, for example, collect FB data across five cases. This was because we discovered that some online platforms did not yield sufficient data for analysis. However, even with this methodological limitation, the findings can provide useful insights on the concept of IV.

The study, as a whole, provides a guide for navigating the IV and conceptualizing crisis responses to mitigate the situation. Its results allow practitioners to identify their organization's present stage in the IV and learn from the IV's mechanism to determine the appropriate actions necessary for contraction and resolution of the IV. Finally, the findings can also help organizations improve their preparation and planning of crisis responses and communications for the effective management of the IV during a crisis, and work toward a correspondingly swift and early closure of the crisis. Future research could investigate the extent of damages associated with the different types of IVs and efficacy of strategies employed in those permutations. Furthermore, as the Type 4 configuration is presently hypothetical in nature, future research could test and verify Type 4's viability and presence. As the cases are selected from different countries and societies, there is potential value in conducting future research that investigates the relationships between differing societal and/or organizational cultures, and the information vacuum.

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